

Appl. No. 10/671,144
Second Preliminary Amendment

AMENDMENTS TO THE CLAIMS

Claims 1-166 (canceled)

Claim 167 (new): Apparatus comprising:

at least one electrode, adapted to be implanted in a patient in contact with a pelvic muscle of the patient; and

a control unit, adapted to drive the at least one electrode to apply an electrical waveform to the muscle, the control unit providing for the waveform a range of pulse width durations that includes 2 ms.

Claim 168 (new): The apparatus according to claim 167, wherein the control unit is adapted to set the range of pulse width durations to be selectable from 0.1 ms to 2 ms.

Claim 169 (new): The apparatus according to claim 167, wherein the at least one electrode is adapted to be implanted in the pelvic muscle.

Claim 170 (new): The apparatus according to claim 167, wherein the pelvic muscle includes a pelvic floor muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic floor muscle.

Claim 171 (new): The apparatus according to claim 167, wherein the pelvic muscle includes a levator ani muscle, and wherein the at least one electrode is adapted to be implanted in contact with the levator ani muscle.

Claim 172 (new): The apparatus according to claim 167, wherein the pelvic muscle includes a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the urethral sphincter muscle.

Claim 173 (new): The apparatus according to claim 167, wherein the pelvic muscle includes a pelvic muscle adjacent to a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic muscle adjacent to the urethral sphincter muscle.

Claim 174 (new): The apparatus according to claim 167, wherein the at least one electrode comprises a single unipolar electrode.

Claim 175 (new): The apparatus according to claim 167, wherein the at least one electrode comprises a pair of bipolar electrodes.

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Claim 176 (new): The apparatus according to claim 167, wherein the at least one electrode comprises a flexible intra-muscular electrode.

Claim 177 (new): The apparatus according to claim 167, wherein the control unit is adapted to be implanted in a body of the patient.

Claim 178 (new): The apparatus according to claim 167, wherein the control unit is adapted to configure the waveform to be biphasic.

Claim 179 (new): The apparatus according to claim 167, wherein the at least one electrode comprises at least one elongated electrode structure, adapted to be implanted in general alignment with a urethra of the patient.

Claim 180 (new): The apparatus according to claim 167, wherein the control unit is adapted to configure the waveform to treat urinary incontinence of the patient.

Claim 181 (new): The apparatus according to claim 180, wherein the urinary incontinence includes urinary urge incontinence, and wherein the control unit is adapted to configure the waveform to treat the urinary urge incontinence.

Claim 182 (new): The apparatus according to claim 180, wherein the urinary incontinence includes stress incontinence, and wherein the control unit is adapted to configure the waveform to treat the stress incontinence.

Claim 183 (new): Apparatus comprising:

- at least one electrode, adapted to be implanted in a patient in contact with a pelvic muscle of the patient; and

- a control unit, adapted to drive the at least one electrode to apply a biphasic electrical waveform to the muscle.

Claim 184 (new): The apparatus according to claim 183, wherein the at least one electrode is adapted to be implanted in the pelvic muscle.

Claim 185 (new): The apparatus according to claim 183, wherein the pelvic muscle includes a pelvic floor muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic floor muscle.

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Claim 186 (new): The apparatus according to claim 183, wherein the pelvic muscle includes a levator ani muscle, and wherein the at least one electrode is adapted to be implanted in contact with the levator ani muscle.

Claim 187 (new): The apparatus according to claim 183, wherein the pelvic muscle includes a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the urethral sphincter muscle.

Claim 188 (new): The apparatus according to claim 183, wherein the pelvic muscle includes a pelvic muscle adjacent to a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic muscle adjacent to the urethral sphincter muscle.

Claim 189 (new): The apparatus according to claim 183, wherein the at least one electrode comprises a flexible intra-muscular electrode.

Claim 190 (new): The apparatus according to claim 183, wherein the at least one electrode comprises at least one elongated electrode structure, adapted to be implanted in general alignment with a urethra of the patient.

Claim 191 (new): The apparatus according to claim 183, wherein the control unit is adapted to configure the waveform to treat urinary incontinence of the patient.

Claim 192 (new): The apparatus according to claim 191, wherein the urinary incontinence includes urinary urge incontinence, and wherein the control unit is adapted to configure the waveform to treat the urinary urge incontinence.

Claim 193 (new): The apparatus according to claim 191, wherein the urinary incontinence includes stress incontinence, and wherein the control unit is adapted to configure the waveform to treat the stress incontinence.

Claim 194 (new): Apparatus comprising:

at least one electrode, adapted to be implanted in a patient in a pelvic muscle of the patient selected from the list consisting of: a levator ani muscle, and a urethral sphincter muscle; and

a control unit, adapted to drive the at least one electrode to apply an electrical waveform to the muscle.

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Claim 195 (new): The apparatus according to claim 194, wherein the pelvic muscle includes the levator ani muscle, and wherein the at least one electrode is adapted to be implanted in the levator ani muscle.

Claim 196 (new): The apparatus according to claim 194, wherein the pelvic muscle includes the urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in the urethral sphincter muscle.

Claim 197 (new): The apparatus according to claim 194, wherein the at least one electrode comprises a flexible intra-muscular electrode.

Claim 198 (new): The apparatus according to claim 194, wherein the control unit is adapted to be implanted in a body of the patient.

Claim 199 (new): The apparatus according to claim 194, wherein the at least one electrode comprises at least one elongated electrode structure, adapted to be implanted in general alignment with a urethra of the patient.

Claim 200 (new): The apparatus according to claim 194, wherein the control unit is adapted to configure the waveform to treat urinary incontinence of the patient.

Claim 201 (new): The apparatus according to claim 200, wherein the urinary incontinence includes urinary urge incontinence, and wherein the control unit is adapted to configure the waveform to treat the urinary urge incontinence.

Claim 202 (new): The apparatus according to claim 200, wherein the urinary incontinence includes stress incontinence, and wherein the control unit is adapted to configure the waveform to treat the stress incontinence.

Claim 203 (new): Apparatus comprising:

- at least one electrode, adapted to be implanted in a patient in contact with a pelvic muscle of the patient; and

- a control unit, adapted to:

- drive the at least one electrode to apply an electrical waveform to the muscle, and

- terminate application of the waveform after a predetermined period of time.

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Claim 204 (new): The apparatus according to claim 203, wherein the predetermined period of time is about 5 seconds.

Claim 205 (new): The apparatus according to claim 203, wherein the control unit is adapted to drive the at least one electrode to reapply the waveform after termination of the application of the waveform.

Claim 206 (new): The apparatus according to claim 203, wherein the at least one electrode is adapted to be implanted in the pelvic muscle.

Claim 207 (new): The apparatus according to claim 203, wherein the pelvic muscle includes a pelvic floor muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic floor muscle.

Claim 208 (new): The apparatus according to claim 203, wherein the pelvic muscle includes a levator ani muscle, and wherein the at least one electrode is adapted to be implanted in contact with the levator ani muscle.

Claim 209 (new): The apparatus according to claim 203, wherein the pelvic muscle includes a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the urethral sphincter muscle.

Claim 210 (new): The apparatus according to claim 203, wherein the pelvic muscle includes a pelvic muscle adjacent to a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic muscle adjacent to the urethral sphincter muscle.

Claim 211 (new): The apparatus according to claim 203, wherein the at least one electrode comprises a single unipolar electrode.

Claim 212 (new): The apparatus according to claim 203, wherein the at least one electrode comprises a pair of bipolar electrodes.

Claim 213 (new): The apparatus according to claim 203, wherein the at least one electrode comprises a flexible intra-muscular electrode.

Claim 214 (new): The apparatus according to claim 203, wherein the control unit is adapted to be implanted in a body of the patient.

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Claim 215 (new): The apparatus according to claim 203, wherein the control unit is adapted to configure the waveform to be biphasic.

Claim 216 (new): The apparatus according to claim 203, wherein the at least one electrode comprises at least one elongated electrode structure, adapted to be implanted in general alignment with a urethra of the patient.

Claim 217 (new): The apparatus according to claim 203, wherein the control unit is adapted to provide for the waveform a range of pulse width durations that includes 2 ms.

Claim 218 (new): The apparatus according to claim 217, wherein the control unit is adapted to set the range of pulse width durations to be selectable from 0.1 ms to 2 ms.

Claim 219 (new): The apparatus according to claim 203, wherein the control unit is adapted to configure the waveform to treat urinary incontinence of the patient.

Claim 220 (new): The apparatus according to claim 219, wherein the urinary incontinence includes urinary urge incontinence, and wherein the control unit is adapted to configure the waveform to treat the urinary urge incontinence.

Claim 221 (new): The apparatus according to claim 219, wherein the urinary incontinence includes stress incontinence, and wherein the control unit is adapted to configure the waveform to treat the stress incontinence.

Claim 222 (new): Apparatus comprising:

at least one electrode, adapted to be implanted in a patient in a pelvic muscle of the patient; and

a control unit, adapted to drive the at least one electrode to apply an electrical waveform to the muscle configured to treat a bladder condition caused by damage to nerve pathways from a brain to a bladder.

Claim 223 (new): The apparatus according to claim 222, wherein the bladder condition includes urge incontinence.

Claim 224 (new): The apparatus according to claim 222, wherein the pelvic muscle includes a pelvic floor muscle, and wherein the at least one electrode is adapted to be implanted in the pelvic floor muscle.

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Claim 225 (new): The apparatus according to claim 222, wherein the pelvic muscle includes a levator ani muscle, and wherein the at least one electrode is adapted to be implanted in the levator ani muscle.

Claim 226 (new): The apparatus according to claim 222, wherein the pelvic muscle includes a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in the urethral sphincter muscle.

Claim 227 (new): The apparatus according to claim 222, wherein the pelvic muscle includes a pelvic muscle adjacent to a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in the pelvic muscle adjacent to the urethral sphincter muscle.

Claim 228 (new): The apparatus according to claim 222, wherein the at least one electrode comprises a single unipolar electrode.

Claim 229 (new): The apparatus according to claim 222, wherein the at least one electrode comprises a pair of bipolar electrodes.

Claim 230 (new): The apparatus according to claim 222, wherein the at least one electrode comprises a flexible intra-muscular electrode.

Claim 231 (new): The apparatus according to claim 222, wherein the control unit is adapted to be implanted in a body of the patient.

Claim 232 (new): The apparatus according to claim 222, wherein the control unit is adapted to configure the waveform to be biphasic.

Claim 233 (new): The apparatus according to claim 222, wherein the at least one electrode comprises at least one elongated electrode structure, adapted to be implanted in general alignment with a urethra of the patient.

Claim 234 (new): The apparatus according to claim 222, wherein the control unit is adapted to provide for the waveform a range of pulse width durations that includes 2 ms.

Claim 235 (new): The apparatus according to claim 234, wherein the control unit is adapted to set the range of pulse width durations to be selectable from 0.1 ms to 2 ms.

Claim 236 (new): Apparatus comprising:

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at least one elongated electrode structure, adapted to be implanted, in general alignment with a urethra of a patient, in contact with a pelvic muscle of the patient; and
a control unit, adapted to drive the at least one electrode to apply an electrical waveform to the muscle.

Claim 237 (new): The apparatus according to claim 236, wherein the at least one electrode is adapted to be implanted in the pelvic muscle.

Claim 238 (new): The apparatus according to claim 236, wherein the pelvic muscle includes a pelvic floor muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic floor muscle.

Claim 239 (new): The apparatus according to claim 236, wherein the pelvic muscle includes a levator ani muscle, and wherein the at least one electrode is adapted to be implanted in contact with the levator ani muscle.

Claim 240 (new): The apparatus according to claim 236, wherein the pelvic muscle includes a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the urethral sphincter muscle.

Claim 241 (new): The apparatus according to claim 236, wherein the pelvic muscle includes a pelvic muscle adjacent to a urethral sphincter muscle, and wherein the at least one electrode is adapted to be implanted in contact with the pelvic muscle adjacent to the urethral sphincter muscle.

Claim 242 (new): The apparatus according to claim 236, wherein the at least one electrode comprises a flexible intra-muscular electrode.

Claim 243 (new): A method comprising:

implanting at least one electrode in a patient in contact with a pelvic muscle of the patient;

driving the at least one electrode to apply an electrical waveform to the muscle;
and

providing for the waveform a range of pulse width durations that includes 2 ms.

Claim 244 (new): The method according to claim 243, wherein providing the range of pulse width durations comprises setting the range of pulse width durations to be selectable from 0.1 ms to 2 ms.

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Claim 245 (new): The method according to claim 243, wherein implanting the at least one electrode comprises implanting the at least one electrode in the pelvic muscle.

Claim 246 (new): The method according to claim 243, wherein driving the at least one electrode comprises configuring the waveform to treat urinary incontinence of the patient.

Claim 247 (new): The method according to claim 246, wherein the urinary incontinence includes urinary urge incontinence, and driving the at least one electrode comprises configuring the waveform to treat the urinary urge incontinence.

Claim 248 (new): The method according to claim 246, wherein the urinary incontinence includes stress incontinence, and wherein driving the at least one electrode comprises configuring the waveform to treat the stress incontinence.

Claim 249 (new): A method comprising:

implanting at least one electrode in a patient in contact with a pelvic muscle of the patient; and

driving the at least one electrode to apply a biphasic electrical waveform to the muscle.

Claim 250 (new): The method according to claim 249, wherein implanting the at least one electrode comprises implanting the at least one electrode in the pelvic muscle.

Claim 251 (new): The method according to claim 249, wherein driving the at least one electrode comprises configuring the waveform to treat urinary incontinence of the patient.

Claim 252 (new): The method according to claim 251, wherein the urinary incontinence includes urinary urge incontinence, and driving the at least one electrode comprises configuring the waveform to treat the urinary urge incontinence.

Claim 253 (new): The method according to claim 251, wherein the urinary incontinence includes stress incontinence, and wherein driving the at least one electrode comprises configuring the waveform to treat the stress incontinence.

Claim 254 (new): A method comprising:

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implanting at least one electrode in a patient in a pelvic muscle of the patient selected from the list consisting of: a levator ani muscle, and a urethral sphincter muscle; and

driving the at least one electrode to apply an electrical waveform to the muscle.

Claim 255 (new): The method according to claim 254, wherein the pelvic muscle includes the levator ani muscle, and wherein implanting the at least one electrode comprises implanting the at least one electrode in the levator ani muscle.

Claim 256 (new): The method according to claim 254, wherein the pelvic muscle includes the urethral sphincter muscle, and wherein implanting the at least one electrode comprises implanting the at least one electrode in the urethral sphincter muscle.

Claim 257 (new): The method according to claim 254, wherein driving the at least one electrode comprises configuring the waveform to treat urinary incontinence of the patient.

Claim 258 (new): The method according to claim 257, wherein the urinary incontinence includes urinary urge incontinence, and driving the at least one electrode comprises configuring the waveform to treat the urinary urge incontinence.

Claim 259 (new): The method according to claim 257, wherein the urinary incontinence includes stress incontinence, and wherein driving the at least one electrode comprises configuring the waveform to treat the stress incontinence.

Claim 260 (new): A method comprising:

implanting at least one electrode in a patient in contact with a pelvic muscle of the patient;

driving the at least one electrode to apply an electrical waveform to the muscle, and

terminating application of the waveform after a predetermined period of time.

Claim 261 (new): The method according to claim 260, wherein the predetermined period of time is about 5 seconds.

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Claim 262 (new): The method according to claim 260, wherein driving the at least one electrode comprises driving the at least one electrode to reapply the waveform after termination of the application of the waveform.

Claim 263 (new): The method according to claim 260, wherein implanting the at least one electrode comprises implanting the at least one electrode in the pelvic muscle.

Claim 264 (new): The method according to claim 260, wherein driving the at least one electrode comprises providing for the waveform a range of pulse width durations that includes 2 ms.

Claim 265 (new): The method according to claim 264, wherein providing the range of pulse width durations comprises setting the range of pulse width durations to be selectable from 0.1 ms to 2 ms.

Claim 266 (new): The method according to claim 260, wherein driving the at least one electrode comprises configuring the waveform to treat urinary incontinence of the patient.

Claim 267 (new): The method according to claim 266, wherein the urinary incontinence includes urinary urge incontinence, and driving the at least one electrode comprises configuring the waveform to treat the urinary urge incontinence.

Claim 268 (new): The method according to claim 266, wherein the urinary incontinence includes stress incontinence, and wherein driving the at least one electrode comprises configuring the waveform to treat the stress incontinence.

Claim 269 (new): A method comprising:

implanting at least one electrode in a patient in a pelvic muscle of the patient;
and

driving the at least one electrode to apply an electrical waveform to the muscle configured to treat a bladder condition caused by damage to nerve pathways from a brain to a bladder.

Claim 270 (new): The method according to claim 269, wherein the bladder condition includes urge incontinence.

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Claim 271 (new): The method according to claim 269, wherein driving the at least one electrode comprises providing for the waveform a range of pulse width durations that includes 2 ms.

Claim 272 (new): The method according to claim 271, wherein providing the range of pulse width durations comprises setting the range of pulse width durations to be selectable from 0.1 ms to 2 ms.

Claim 273 (new): A method comprising:

implanting at least one elongated electrode structure in general alignment with a urethra of a patient, in contact with a pelvic muscle of the patient; and
driving the at least one electrode to apply an electrical waveform to the muscle.

Claim 274 (new): The method according to claim 273, wherein implanting the at least one electrode comprises implanting the at least one electrode in the pelvic muscle.